COOMASSIE BLUE STAINING

Detection of protein bands in a gel by Coomassie blue staining depends on nonspecific binding of a dye, Coomassie brilliant blue R, to proteins. The detection limit is 0.3 to 1 μg/protein band. In this procedure, proteins separated in a polyacrylamide gel are precipitated using a fixing solution containing methanol/acetic acid. The location of the precipitated proteins is then detected using Coomassie blue (which turns the entire gel blue). After destaining, the blue protein bands appear against a clear background. The gel can then be stored in acetic acid or water, photographed, or dried to maintain a permanent record.

Coomassie blue staining solution

50% (v/v) methanol
0.05% (w/v) Coomassie brilliant blue R-250 (Bio-Rad or Pierce)
10% (v/v) acetic acid
40% H_2O
Dissolve Coomassie brilliant blue R in methanol before adding acetic acid and water.
If precipitate is observed following prolonged storage, filter to obtain a homogeneous solution.

Fixing solution for Coomassie blue and silver staining

50% (v/v) ethanol
10% (v/v) acetic acid
40% H_2O
Store at room temperature

Methanol/acetic acid destaining solution

40% (v/v) ethanol
5% (v/v) acetic acid
Store at room temperature